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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/769,404	01/26/2001	Theo Wallimann	8932-296	4809

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EXAMINER	
WANG, SHENGJUN	
ART UNIT	PAPER NUMBER
1617	

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/769,404	WALLIMANN ET AL.	
	Examiner	Art Unit	
	Shengjun Wang	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2006*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-18 and 21-27* is/are pending in the application.

4a) Of the above claim(s) *4-6,8-12,15-18,25-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,13,14 and 21-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 8, 2006 has been entered.

Claim Rejections 35 U.S.C. 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 13, 14, 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaddurah-Daouk (US 5,998,457) in view of Meisner (US 4,772,591), Grant et al. (US 5,888,553), Beale (US 5,756,469) and Beale (US 5,716,926).

3. Kaddurah-Daouk teaches a method of treating osteoporosis or osteoarthritis comprising administering therapeutical effective amount of creatine compound, or a pharmaceutical acceptable salt, to patient. See, particularly, the abstract, table 1-2, and claims 1-12. As to the amount of creatine administered, Kaddurah-Daouk states: "the actual amount of drug needed will be depend on factors such as the size, age, and severity of disease in afflicted individual. ... for

this invention the creatine compound will be administered at dosage and period of time effective to reduce, ameliorate or eliminate the symptoms of the disease." Col. 11, lines 24-44.

4. Kaddurah-Daouk does not teach expressly the employment of creatine pyruvate for the treatment, or the particular amount administered, or the method may be employed for promoting growth and mineralization of bone; improving acceptance and osseous integration of bone; or accelerating healing as claimed in claims 22-24, or the purity as herein required.

5. However, Grant et al. teaches that the excess of cortisol is known to be a cause of osteoporosis, tissue degeneration, and an anabolic composition with anticortisol effect are used to balance effect of cortisol. The anabolic composition comprising creatine or its salts, wherein the amount of creatine or its salts is in the range of 1-10,000 mg. See, column 1, line 52 bridging column 2, line 59, column 5, lines 56-65, column 13, lines 8-9, and claim 8. Meisner teaches a method for accelerated wound healing or treating degenerative disorders including periodontal disease osteoarthritis, comprising administering a composition comprising creatine to an animal or human. See, particularly, column 1, line 28 bridging column 2, line 45, column 5, lines 3 bridging column 7, line 10. Beale ('469) teaches creatine pyruvate (pyruvyl-creatine) is particularly useful as cortisol antagonist or cortisol blocker for prevent the catabolic activity of cortisol. See column 1, lines 7-18, 54-60; column 3, lines 46-63, and column 5, lines 54-60. Beale ('926) further teaches that pyruvate is known to be useful for treating osteoporosis. See, claim 24. Furthermore, it is noted that none of the cited references require the presence of all of the three compounds excluded herein: dihydrotriazine, dicyano-diamide, and creatinine.

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to employ creatine pyruvate composition, which

is essentially free at least one of the three compounds, for treating patients suffering connective tissue degenerative disorders, including those unrelated to weight gain or weight lose, such as osteoporosis, osteoarthritis or periodontitis, or for accelerating wound healing, promoting growth of connective tissue (cartilage). Note claims 23 and 24 read on the composition comprising creatine pyruvate, since creatine pyruvate is both a creatine salt, and a pyruvate.

A person of ordinary skill in the art would have been motivated to employ creatine pyruvate for treating connective tissue degenerative disorders, including those unrelated to weight gain or weight lose, such as osteoporosis, osteoarthritis or periodontitis, or for accelerating wound healing, promoting growth of connective tissue (cartilage) because it is prima facie obvious to combine two compounds each of which is taught in the prior art to be useful for same purpose in order to form third composition that is to be used for very the same purpose; idea of combining them flows logically from their having been individually taught in prior art; thus , the claimed invention which employ a combination (salt) of two compounds known to be useful for treating osteoporosis sets forth prima facie obvious subject matter. See In re Kerkhoven, 205 USPQ 1069. Note treating osteoporosis is to promoting minerization of bone. Further, creatine pyruvate is particularly known to be useful for treating disease associated with cortisol activity and connective tissue degenerative disorders is known to be closely related to cortisol activity. Claims 22-24 are obvious because creatine is known to be useful for promoting tissue repair process, and treating osteoarthritis and osteoporosis would also considered as a process of promoting tissue (cartilage) repairing since one of the major symptoms of osteoarthritis and osteoporosis is tissue degeneration. As to claims 28 and 30, note, in view of the teachings of Beale, Meisner and Grant, one of ordinary skill in the art would have appreciated

that therapeutic effect of creatine pyruvate is not limited only to the symptoms related to weight gain or weight lose. Claims 13 and 14 are interpretated broadly as read on the elected invention, i.e., no foreign tissue have been introduced into the bond, since human bone are known to contain cells in general and chondrablasts cell particular. Finally, The optimization of a result effective parameter, e.g., the effective amount of creatine, particularly within the range of the prior art, is considered within the skill of the artisan, absent evidence to the contrary. See, In re Boesch and Slaney (CCPA) 204 USPQ 215. Furthermore, the instant claims are essentially directed to a particular salt of creatine for treating disorders known to be treated by creatine, or its derivatives, or its salts. Absent evidence to the contrary, the employment of pyruvate creatine is seen to be a selection from amongst equally suitable material and as such obvious. Ex parte Winters 11 USPQ 2nd 1387 (at 1388). As to the negative limitation, "essentially free of one or more of dihydrotriazine, dicyano-diamide, or creatinine," note since the cited references do not teach or suggest the particular requirement of the three compounds, the suggested method would encompass the employment of a composition essentially free of at least one of the compounds. What is claimed herein is a specific range (essentially free) within a broad range (not required). It is well settled that in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.Cir. 1990).

Response to the arguments

Applicants' amendments and remarks submitted May 8, 2006 have been fully considered, but are unpersuasive.

6. Applicants contend the amount of creatine pyruvate herein claimed is not obvious over the cited prior art since the prior art teach much larger amounts. The arguments are unpersuasive. First, Applicants have misread the disclosure of Kaddurah-Daouk reference. The particular amounts recited by applicants are the amounts used in the prior art for treatment of other diseases, such as improve muscle function for athletes (2-8gms/day); cancer, viral infection 1 gm/kg/day, etc. The citing of these data shows the up limit of the amount of creatine, not the amount used in Kaddurah-Daouk's invention. Kaddurah-Daouk particularly states: "the actual amount of drug needed will be depend on factors such as the size, age, and severity of disease in afflicted individual. ... for this invention the creatine compound will be administered at dosage and period of time effective to reduce, ameliorate or eliminate the symptoms of the disease." Col. 11, lines 24-44. It is further noted that Grant discloses a wide range of creatine from 1 mg to 10,000 mg. As to the amount of pyruvate disclosed by Beale et al. it is noted the amount disclosed therein is for pyruvate. Considering the cited references as a whole, particularly, considering the teachings that creatine is particularly useful for treating osteoporosis or osteoarthritis in as low as 1 mg, one of ordinary skill in the art would have reasonably expected that 1.4-284 mg of creatine pyruvate per day be useful for reducing, or ameliorating the symptoms of the disease. Therefore, absent evidence showing the combination of creatine and pyruvate, or showing the particular creatine salt, possess unexpected benefit, the claimed invention would have been obvious.

7. As to the limitation "in need thereof," the cited references certainly meet the limitation since the references fairly suggested the usefulness of creatine pyruvate for treating osteoporosis or osteoarthritis, both are bone disorders.

8. The argument that such claims are not directed to the old and well known ultimate utility (osteoporosis or osteoarthritis) for the compounds, e.g., creatine, are not probative. It is well settled patent law that mode of action elucidation (promote growth and mineralization of bone or cartilage, etc.) does not impart patentable moment to otherwise old and obvious subject matter. Applicant's attention is directed to In re Swinehart, (169 USPQ 226 at 229) where the Court of Customs and Patent Appeals stated "is elementary that the mere recitation of a newly discovered function or property, inherently possessed by thing in the prior art, does not cause a claim drawn to those things to distinguish over the prior art." Additionally, where the patent Office has reason to believe that a functionally limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to requires the applicant to prove that the subject matter shown to be in the prior art does not posses the characteristic relied on. In the instant invention, the claims are directed to the ultimate utility set forth in the prior art, albeit distanced by various biochemical intermediates. The ultimate utility for the claimed compounds is old and well known rendering the claimed subject matter obvious to the skilled artisan. It would follow therefore that the instant claims are properly rejected under 35 USC 103.

9. In response to applicant's argument that the cited references do not teach or suggest the particular functions herein, such as promote growth and mineralization of bone or cartilage, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

10. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

11. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the teaching, suggestion and motivation are found in the cited reference and in the knowledge generally available to one of ordinary skill in the art. Particularly, the cited references teach the usefulness of creatine and pyruvate for treating, or reducing the symptoms of, osteoporosis or osteoarthritis. Further, one of ordinary skill in the art would have expected that a salt of therapeutical compound be similarly useful as the compound itself.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shengjun Wang whose telephone number is (571) 272-0632. The examiner can normally be reached on Monday to Friday from 7:00 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan, can be reached on (571) 272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SHENGJUN WANG
PRIMARY EXAMINER

Shengjun Wang
Primary Examiner
Art Unit 1617